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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,095	11/22/2000	Toyotaro Tokimoto	TOKIMOTO ET AL PCT	6201

7590 03/15/2004

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EXAMINER

BRIER, JEFFERY A

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/701,095

Applicant(s)

TOKIMOTO ET AL.

Examiner

Jeffery A Brier

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-9 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/02/04 has been entered.

### ***Response to Amendment***

2. The amendment filed on 01/02/04 has been entered.

### ***Response to Arguments***

3. The arguments filed on 01/02/04 have been fully considered but they are deemed not to be persuasive.

The translation of the German patent to Phan provided by applicant as well as the equivalent Australian patent AU 755524 B and U.S. Patent No. 6,661,429 have been fully considered and the teachings in these documents is Control circuitry 19 combines adjacent dots 11 to form a dynamic pixel 18 in order to the address these as a logical unit. Addressing involves high-frequency repetition, preferably at a rate of 100 Hz. Therefore, as can be seen in figure 2b), four dots form a pixel, a red dot 13, two green dots 14 and a blue dot 15. Static pixel 17 consists of four dots and dynamic pixel 18 consists of four dots. Looking at the blue dot in row 2 column 2 it is seen that this

blue dot is in one static pixel and three different dynamic pixels. Each of the three dynamic pixels covering the blue dot is formed from different groups of static pixel data. Applicant is correct the reference is not clear how the data corresponding to the static pixels are combined to form the dynamic pixels. What is clear is that adjacent static pixels are combined to form a dynamic pixel and it is clear each color dot of the static pixel is selected and is used to activate the corresponding dot. The claims are lengthy but they do not claim the step of selecting and the step of activating is performed more than once. In driving the static pixel Phan clearly performs the claimed step of selecting and the step of activating at least once. Thus, Phan still teaches the claim. While there are differences between applicants detailed specification and Phan, U.S patent applications are examined with regards to the claims and prior art.

One of the differences between Phan and applicants invention is Phan has the same number of pixel data as there are pixels before the control circuitry creates the dynamic pixels by combining adjacent static pixel data 17 while applicant has a bit map that is greater than the number of display pixels. Applicant is down sampling the bitmap to a reduced number of display pixels in a novel way but the claims need to be amended to bring out this distinction.

Applicant should consider adding to claim 11 the image storing section and data distribution control section of claim 9 while also better claiming that which is stored in the image storing section and how the data distribution control section implements applicants invention. Also, as will be seen below in the detailed analysis of claim 11, the dividing, associating, selecting, and activating steps need to be further enhanced to

claim how applicants invention is implemented. Until that is done, Phan which is very close to applicants invention, teaches or renders obvious the rejected claims.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 at lines 19-20, 33-34 and 48-49 claim a step of associating each of said pixel groups to each of said first (first at lines 19-20, second at lines 33-34, and third at lines 48-49) color lamps in said display screen. This claim language is confusing since it associates each pixel group to each color lamp in the display screen while actually each pixel group is associated with a respective color lamp in the display screen. The claim needs to be amended to more clearly claim the association. The last wherein clause does not overcome the problem with lines 19-20, 33-34 and 48-49 because those lines clearly associates each of the pixel groups to the color lamps. Clearly lines 19-20, 33-34 and 48-49 need to be amended to overcome this wording problem in the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 2, 5-9, and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Gia Chuong Phan, U.S. Patent No. 6,661,429.

Claim 11:

Phan teaches a method for displaying bitmap multi-color image data (*figures 2a and 2b show a bit map image formed with red, green and blue dots*) on a dot-matrix type display screen (*see figures 2a and 2b*), wherein said display screen is structured by a multitude of first color lamps (*red dots 13, LED*), a multitude of second color lamps (*green dots 14, LED*), and a multitude of third color lamps (*blue dots 15, LED*), wherein said multitude of first color lamps, said multitude of second color lamps, and said multitude of third color lamps are dispersedly arranged on said display screen evenly and according to a regular pattern (*the LEDs are arranged in a matrix, thus, they are dispersedly arranged in a regular pattern*), wherein said bitmap multi-color image data to be displayed on said display screen is a bitmap data comprising a multitude of pixels (*figures 2a and 2b show a multitude of pixels*), and wherein each of said pixels is made of first color data (*red color data is supplied to the red dot*), second color data (*green color data is supplied*

to the green dot), and third color data (blue color data is supplied to the blue dot),

said method comprising:

as for said first color (red):

a step of dividing said multitude of pixels in said bitmap multi-color image data into a multitude of pixel groups (the static pixel data and the data for each of the three dynamic pixels that affect any one dot is formed by dividing the data of the static pixels into groups), wherein each of said pixel groups comprises at least two of said pixels that are adjacent to each other (figures 2a and 2b each pixel group consists of four pixels that are adjacent to each other);

a step of associating each of said pixel groups to each of said first color lamps in said display screen (the static pixel group and the three dynamic pixel groups are associated with their corresponding color dot, LED); and  
as for each said first color (red) lamp,

a step of selecting a pixel (red), from said pixels (red, green and blue) that form the pixel group associated with that first color lamp, according to a specific order, and

a step of activating that first color lamp according to the first color data of said pixel that has been selected (the red data corresponding to the static group is used to activate the red dot); (the step of selecting and

*the step of activating are claimed to be performed only once, thus, Phan clearly teaches this claim)*

as for said second color (*green*):

a step of dividing said multitude of pixels in said bitmap multi-color image data into a multitude of pixel groups (*the static pixel data and the data for each of the three dynamic pixels that affect any one dot is formed by dividing the data of the static pixels into groups*), wherein each of said pixel groups comprises at least two of said pixels that are adjacent to each other (*figures 2a and 2b each pixel group consists of four pixels that are adjacent to each other*);

a step of associating each of said pixel groups to each of said second color lamps in said display screen (*the static pixel group and the three dynamic pixel groups are associated with their corresponding color dot, LED*); and

as for each said second color (*green*) lamp,

a step of selecting a pixel (*green*), from said pixels (*red, green and blue*) that form the pixel group associated with that second color lamp, according to a specific order, and a step of activating that second color lamp according to the second color data of said pixel that has been selected (*the green data corresponding to the static group is used to activate the green dot*); (*the step of selecting and the step of activating are claimed to be performed only once, thus, Phan clearly teaches this claim*) and



as for said third color (*blue*):

a step of dividing said multitude of pixels in said bitmap multi-color image data into a multitude of pixel groups (*the static pixel data and the data for each of the three dynamic pixels that affect any one dot is formed by dividing the data of the static pixels into groups*), wherein each of said pixel groups comprises at least two of said pixels that are adjacent to each other (*figures 2a and 2b each pixel group consists of four pixels that are adjacent to each other*);

a step of associating each of said pixel groups to each of said third color lamps in said display screen (*the static pixel group and the three dynamic pixel groups are associated with their corresponding color dot, LED*); and

as for each said third color (*blue*) lamp,

a step of selecting a pixel (*blue*), from said pixels (*red, green and blue*) that form the pixel group associated with that third color lamp, according to a specific order, and

a step of activating that third color lamp according to the third color data of said pixel that has been selected (*the blue data corresponding to the static group is used to activate the blue dot*); (*the step of selecting and the step of activating are claimed to be performed only once, thus, Phan clearly teaches this claim*)

wherein the relative positional relationship between said first color lamps on said display screen and said pixel groups for said first color correspond to each other (*the phrase correspond to each other is a broad phrase and is fully met by Phan, where Phan's red dots have a corresponding static pixel group and*

*corresponding three dynamic pixel groups, as can be seen in figure 2b the red dots have corresponding groups of static and dynamic pixels);*

wherein the relative positional relationship between said second color lamps on said display screen and said pixel groups for said second color correspond to each other (*the phrase correspond to each other is a broad phrase and is fully met by Phan, where Phan's green dots have a corresponding static pixel group and corresponding three dynamic pixel groups, as can be seen in figure 2b the green dots have corresponding groups of static and dynamic pixels);*

wherein the relative positional relationship between said third color lamps on said display screen and said pixel groups for said third color correspond to each other (*the phrase correspond to each other is a broad phrase and is fully met by Phan, where Phan's blue dots have a corresponding static pixel group and corresponding three dynamic pixel groups, as can be seen in figure 2b the blue dots have corresponding groups of static and dynamic pixels);* and

wherein, as for a first color lamp, a second color lamp, and a third color lamp that are arranged adjacent to each other, the pixel group for said first color that is associated with that first color lamp, the pixel group for said second color that is associated with that second color lamp, and the pixel group for third color that is associated with that third color lamp partially overlap one another (*the groups for the red dot, the green dot and the blue dot partially overlap as can be seen in figure 2b).*

Claim 2

Phan teaches the method according to claim 11, wherein a total of four pixels, adjacent each other in two rows and two columns on said bitmap image data plane, constitute one of the groups (*figure 2b shows four pixels forming one group having tow rows and two columns*).

Claim 5:

Phan teaches the method according to claim 11, wherein said groups having the same color are partially overlapped on said bitmap image data plane (*each of the green, red and blue LEDs of static pixel 17 are overlapped by the corresponding green, red and blue LED data of the static pixel data and the three dynamic pixel data*).

Claim 6:

Phan teaches the method according to claim 11, wherein said groups having the same color do not partially overlap on said bitmap image data plane (*figure 2 shows one static pixel group and three dynamic pixel groups, where the data for the blue dot is from the static pixel group and from three dynamic pixel groups that obtain their data from static pixel groups which do not partially overlap*).

Claim 7:

Phan teaches the method according to claim 11, wherein regularity for orderly selecting a plurality of pixels that belong to one group is unified into one (*it is not clear what the one means but it is interpreted to mean one frame, Phan,*

*applies to the red, green and blue dots a signal derived by selecting the pixel data in the static group, for example, within one frame or within one pixel clock or within one line.).*

Claim 8:

Phan teaches the method according to claim 11, wherein regularity for orderly selecting a plurality of pixels that belong to one group is different among adjacent groups (*the static group and the three dynamic groups for the red dot is different than the static group and the three dynamic groups for the green dot is different than the static group and the three dynamic groups for the blue dot, thus the regularity for orderly selecting the pixels belonging to one group is different among adjacent groups since they are spatially different then temporally they will be selected differently).*

Claim 9:

Phan teaches a display apparatus that operates based on the display method according to claim 11, comprising:

*a dot matrix-type display screen section in which said first color lamps, said second color lamps and said third color lamps are dispersedly arrayed (Figures 2a and 2 b clearly show a dot matrix-type display);*

*an activating circuit section for individually activating said first lamps, second lamps and third lamps to emit light (at column 3 lines 50-53 each dot has its own receiver for receiving digital information and converting the digital information into luminescent intensity of the dots);*

an image data storing section for storing bitmap multi-color image data to be displayed (*inherently an image data storing section is present in order for controller 19 to combine neighboring dots 11 to a dynamic pixel 18.*); and  
a data distribution control section for distributing and transferring the image data stored in the image data storing section to said activating circuit section (*controller 19 after combining neighboring dots 11 to a dynamic pixel 18 then distributes and transfer the image data via network 20 to the dot's receiver*).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gia Chuong Phan, U.S. Patent No. 6,661,429.

Claim 3:

The method according to claim 11, wherein a total of nine pixels, adjacent each other in three rows and three columns on said bitmap image data plane, constitute one of the groups.

Phan does not teach nine pixels constituting one of the groups. Phan in figures 2a and 2b clearly teaches using one, two, or four static pixels 17 constituting one of the groups. Phan in figure 4 clearly teaches one or two static pixels 17 constituting one of

the groups. More pixels would be desirable if more color resolution is desired. It would have been obvious to one of ordinary skill in the art at the time of the invention to have nine pixels form the group so increased color resolution is generated which is an object of Phan's invention.

Claim 4:

The method according to claim 11, wherein a total of sixteen pixels, adjacent each other in four rows and four columns on said bitmap image data plane, constitute one of the groups.

Phan does not teach sixteen pixels constituting one of the groups. Phan in figures 2a and 2b clearly teaches using one, two, or four static pixels 17 constituting one of the groups. Phan in figure 4 clearly teaches one or two static pixels 17 constituting one of the groups. More pixels would be desirable if more color resolution is desired. It would have been obvious to one of ordinary skill in the art at the time of the invention to have sixteen pixels form the group so increased color resolution is generated which is an object of Phan's invention.

***Prior Art***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Daly, U.S. Patent No. 6,078,307, describes various ways of displaying a higher resolution image on a lower resolution display.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A. Brier whose telephone number is (703) 305-4723. The examiner can normally be reached on M-F from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713).

**Any response to this action should be mailed to:**


Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

  
Jeffery A Brier  
Primary Examiner  
Art Unit 2672